

SUPPLEMENTAL AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/472,958
Attorney Docket No.: Q57079

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): A digital zoom-out apparatus for forming a zoomed-out image from a plurality of received image signals in accordance with a given magnification, the apparatus comprising:

an image signal storage unit which stores a plurality of frame or field image signals;

a motion information detector which detects motion information between first and second image signals of the plurality of frame or field image signals; and

a record and control unit which zooms out the received frame or field image signals in accordance with the given magnification, receives motion information from said motion information detector, controls the location in said image signal storage where the zoomed-out image signals are to be recorded, and records zoomed-out image signals in said image signal storage unit,

wherein the first image signal corresponds to a first image of a first area, and the second image signal corresponds to a second image of a second area, and

wherein the plurality of received frame or field images, including the first and second images, are zoomed-out and combined to form the zoomed-out image, which is synthesized according to a degree of overlap between the received images, the zoomed-out image including

SUPPLEMENTAL AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/472,958
Attorney Docket No.: Q57079

overlapping portions of at least the first and second areas, and at least some of non-overlapping portions of the first and second areas.

2. (original): The digital zoom-out apparatus of claim 1, wherein said motion information detector uses data provided by an accelerometer to detect the motion information.
3. (original): The digital zoom-out apparatus of claim 1, wherein said motion information detector uses data provided by a gyroscopic sensor to detect the motion information.
4. (original): The digital zoom-out apparatus of claim 1, wherein said motion information detector compares a previously-received image signal with a currently-received image signal to detect said motion information.
5. (original): The digital zoom-out apparatus of claim 1, wherein said record and control unit stores in said image signal unit only those portions of received images needed to form the zoomed-out image, whereby storage space is conserved by elimination of redundant information.
6. (previously presented): The digital zoom-out apparatus of claim 5, wherein redundant copies of duplicate portions of received images which overlap are not stored in said image signal unit by said record and control unit.

SUPPLEMENTAL AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/472,958
Attorney Docket No.: Q57079

7. (previously presented): The digital zoom-out apparatus of claim 6, wherein when said record and control unit receives a new image signal which includes a duplicate portion overlapping with a previously-received image signal, the record and control unit maintains the duplicate portion from the previously-received image signal.

8. (previously presented): The digital zoom-out apparatus of claim 6, wherein when said record and control unit receives a new image signal which includes a duplicate portion overlapping with a previously-received image signal, the record and control unit replaces the duplicate portion of the previously-received image signal with the duplicate portion of the new image signal.

9. (previously presented): The digital zoom-out apparatus of claim 6, wherein when said record and control unit receives a new image signal which includes a duplicate portion overlapping with a previously-received image signal, the record and control unit stores an interpolation of the duplicate portion of the previously-received image signal and the duplicate portion of the new image signal.

10. (previously presented): The digital zoom-out apparatus of claim 6, wherein non-overlapping portions of received images, needed to form the zoomed-out image, are stored in said image signal unit by said record and control unit.

SUPPLEMENTAL AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/472,958
Attorney Docket No.: Q57079

11. (previously presented): The digital zoom-out apparatus of claim 1, wherein the zoomed-out image includes a larger area than that of the first image, and includes a larger area than that of the second image.

12. (previously presented): The digital zoom-out apparatus of claim 1, wherein the plurality of received frame or field images are images captured by a camera, and wherein the zoomed-out image includes an area larger than a respective area within a viewing angle of the camera when capturing each of the images.

13. (new): The digital zoom apparatus of claim 1, wherein part of the zoomed-out image is created by a single image signal.

14. (new): The digital zoom-out apparatus of claim 1, wherein in the overlapping portion of said first image and said second image, only the first image signal is stored in said image signal unit by said record and control unit.

15. (new): The digital zoom-out apparatus of claim 1, wherein in the overlapping portion of said first image and said second image, only the second image signal is stored in said image signal unit by said record and control unit.